

**National Digital Forecast Database (NDFD)
Experimental Graphic Forecast WFO Displays
Product Description Document
6/5/03**

Part I - Mission Connection

- a. Description of Product - The National Weather Service's National Digital Forecast Database (NDFD) Experimental Graphic Forecast Displays (<http://www.erh.noaa.gov/er/phi/gfe/gridded.html>) are web-based presentations of a prescribed set of digital forecast data originating from local Weather Forecast Office (WFO) digital databases. The data are displayed in a WFO Mount Holly's AFI (Areal Forecast Interface) software package. The AFI software display functions make the standardization of web graphics possible for a WFO's geographic area of responsibility. For more information on the NDFD, please refer to the NDFD Information web site at the following URL: <http://www.nws.noaa.gov/ndfd/index.htm>.

The WFO digital forecast data are uploaded to a regional web server. These graphic images display various forecasted weather parameters from the time of issuance out to time projections ranging from 48 to 168 hours, depending upon the element. Initially, the available elements (and their temporal and spatial resolution) will be limited, but additional data fields having greater temporal and spatial resolution will be added as the NDFD matures.

- b. Purpose - NDFD is a means to exploit technology to the fullest, and make a seamless suite of NWS information available efficiently, and in a convenient and useful form to best meet customer and partner needs. The NDFD graphic forecasts fulfill additional NWS objectives for improving the accessibility and availability of weather information to the public. In support of the mission described in the *National Weather Service Strategic Plan for FY2003 - FY 2008*, the NDFD is a "...national information database and infrastructure which can be used by other governmental agencies, the private sector, the public, and the global community."
- c. Intended Audience - The NWS graphic forecasts are intended for all users who need to view the content within the NWS digital forecast databases. While the data are available in digital form, many NWS customers cannot interpret or use these digital data unaided. For those who cannot, a graphic presentation is the most efficient means to communicate the large amount of information originating from NWS WFOs.
- d. Presentation Method - The data are presented as web-based graphic images. The data are displayed in a WFO Mount Holly's AFI (Areal Forecast Interface) software package. The AFI software display functions make the standardization of web graphics possible for a WFO's geographic area of responsibility.

The goal in redesigning the display was to allow for more flexibility and increased functionality (Figure 1) as the NWS begins to enter the National Digital Forecast Database (NDFD) Era. The following are just some examples of how the design was improved.

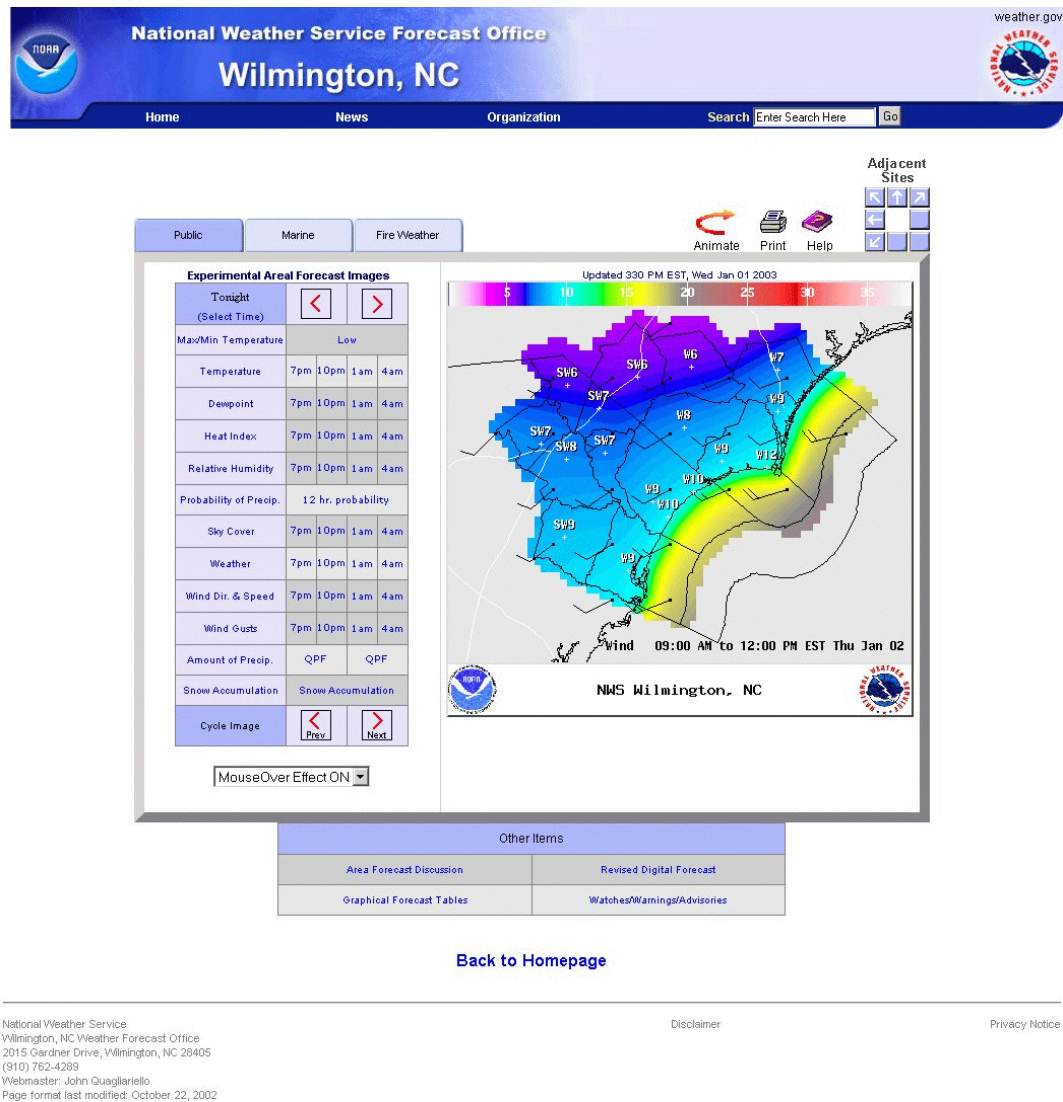


Figure 1



Figure 2: Tabs

On top left of the display, are tabs (Figure 2) which allow users to select the desired forecast. Each office will have a “Public” tab, with optional taps for forecasts such as Marine and Fire Weather. For a consistent look, the tab design is the same as what appears above the Watch/Warning/Advisory Map at weather.gov.

On the top right of the display, users can: select the animate icon to animate or step through the images (additional information on this feature can be found later in this document); select the print icon to print the displayed image; select the help icon to get details about the product; or pan to the Areal Forecast Image page of a surrounding office (Figure 3).



Figure 3: Animate/Print/Help/Adjacent Site options

The new interface used to select the various weather elements has the elements arranged in rows (Figure 4) instead of the original column format. To scroll through 12-hour forecast periods, users can click on either the back or forward directional arrow, or click on the period which is displayed next to the directional arrows for a pop-up menu listing all the 12-hour periods (Figure 5). Placing the cursor over a particular time will automatically change the displayed image, but there is an option to turn this feature off.

Experimental Areal Forecast Images				
Tonight (Select Time)				
Max/Min Temperature	Low			
Temperature	7pm	10pm	1am	4am
Dewpoint	7pm	10pm	1am	4am
Heat Index	7pm	10pm	1am	4am
Relative Humidity	7pm	10pm	1am	4am
Probability of Precip.	12 hr. probability			
Sky Cover	7pm	10pm	1am	4am
Weather	7pm	10pm	1am	4am
Wind Dir. & Speed	7pm	10pm	1am	4am
Wind Gusts	7pm	10pm	1am	4am
Amount of Precip.	QPF		QPF	
Snow Accumulation	Snow Accumulation			
Cycle Image	 Prev		 Next	

Figure 4: Public Weather Elements

Experimental Areal Forecast Images		
Thursday (Select Time)	<	>
Tonight		
Thursday		
Thursday night		
Friday		
Friday night		
Saturday		
Saturday night		
Sunday		
Sunday night		
Monday		
Monday night		
Tuesday		
Tuesday night		
Wednesday		

Cycle Image	< Prev	> Next
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Figure 5: Selecting 12-hour periods

The format will allow for different image sizes (Figure 6), depending on the size/shape of each County Warning Area (CWA). The only restriction is that image width cannot exceed 520 pixels.

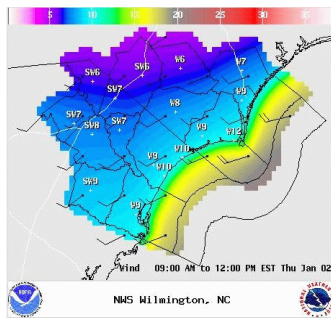


Figure 6: CWA png Image

By selecting the animate icon on the top left of the display, a new page will open which will give users the option to step through or animate each weather element (Figure 7). Users can return to one of the main forecast pages by selecting the appropriate tab on the upper left of the display.

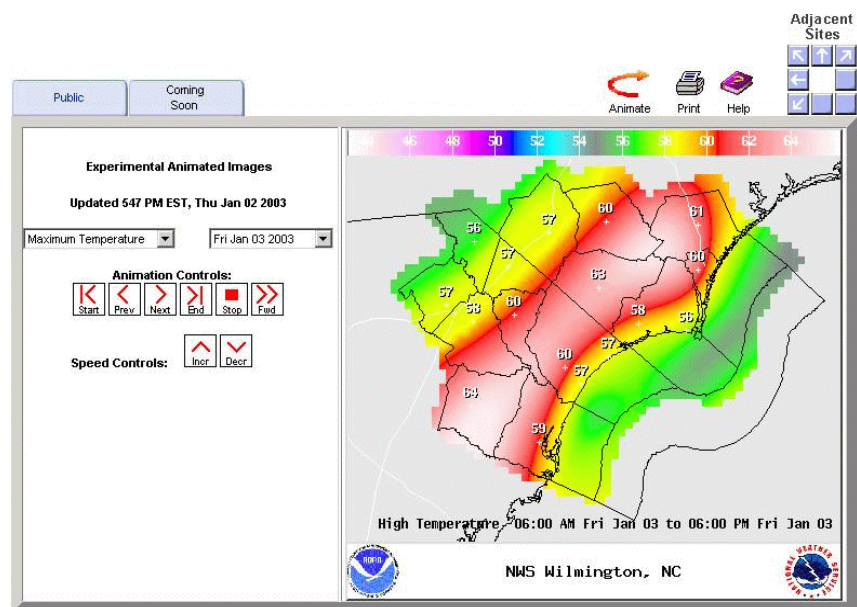


Figure 7: Animation Page

A table labeled “Other Items” (Figure 8) found toward the bottom of the page contains frequently used products related to each type of forecast (i.e. Public, Marine, Fire Weather, etc.)

Other Items		Other Items	
Synopsis	Offshore Waters Forecast	Area Forecast Discussion	Revised Digital Forecast
Coastal Observations	Buoy Observations	Graphical Forecast Tables	Watches/Warnings/Advisories

Figure 8: “Other Items”sample tables (top marine, bottom public)

Each of the Tabs (Public, Marine and Fire Weather) described above in Figure 2 will contain the following elements by September 2003.

Public

1. Max/Min

2. Temperature
3. Dew point
4. Heat Index/Wind Chill
5. Relative Humidity
6. Probability of Precip (12hr)
7. Sky Cover
8. Weather
9. Wind Direction/Speed
10. Wind Gusts
11. QPF
12. Snow Amount

Marine (where appropriate)

1. Significant Wave Height
2. Sky Cover
3. Weather
4. Wind Direction/Speed
5. Wind Gusts
6. Visibility

Fire Weather (where appropriate)

1. Max/Min
2. Lightning Activity Level
3. Mixing Height or Stability
4. Transport Wind Direction/Speed
5. Haines Index
6. Dew Point
7. Relative Humidity
8. Sky Cover
9. Probability of Precip (12 hr)
10. Weather
11. Max/Min
12. QPF

WFO graphics will follow a standardized format prescribed by the NWS to best meet the needs of its customers and partners. The NWS is working to ensure that local graphic forecasts have display characteristics consistent with national and regional products. However, the variety of local elements, as well as their temporal and spatial resolutions, may vary from those found in the NDFD graphic displays covered by this PDD.

For each geographic level of display the user may select the weather element and time period to display and create a looped presentation of images over time.

- e. Feedback Mechanism - We are always seeking to improve our products based on user

feedback. An OMB approved form may be used to submit comments about this new product. It is available on or within the web site containing the experimental product. For general questions or comments regarding the National Digital Forecast Database, Please email: nws.ndfd@noaa.gov

We are always seeking to improve our products based on user feedback. General comments regarding local WFO web displays and may be submitted to the WFO webmaster. These comments are then forwarded to the Regional Headquarters webmaster and AWIPS Program Manager.

Technical comments for the National Digital Forecast Database (NDFD)
Experimental Graphic Forecast WFO Displays may be addressed to:
National Weather Service Eastern Region Headquarters
Attn: AFI Program (AFI), ER1
630 Johnson Ave
Bohemia, NY 11716

Part II - Technical Description

- a. Format & Science Basis - The most recent list of NDFD forecast elements, definitions, and technical information (e.g., temporal and spatial resolutions of the graphics, and geographic coverage) may be found on the NDFD technical page at the following URL: www.weather.gov/ndfd/technical/technical.htm
- b. Product Availability - WFO web-based graphics within the AFI program are continuously available on local WFO web pages. Forecast grids are revised at the local WFOs on an event-driven basis. The revised data is loaded to web servers within an hour of WFO updates. At a minimum, revised data will be refreshed daily no later than 1800 Coordinated Universal Time (UTC).
- c. Other Details -
 - (1) NWSI 10-506 will be the official procedural directive for NDFD.

The standard Eastern Region software package for creating and displaying GFE graphics will be the **AFI** software created by Robert Stauber, WFO PHI. This latest version of the software is available for download via the Local Application Database.

<http://isl715.nws.noaa.gov/LAD/index.php3>